

# Knowles/SYFER

## COG/NPO AEC-Q200 & Standard Capacitance Range

	COG/NPO (1B)	0402	0603	0805	1206	1210	1808	1812		
	Part number suffix	-	-	-	-	-	AG1	-	U99	
	Maximum Thickness	0.61mm	0.8mm	1.37mm	1.7mm	2.0mm	2.2mm	2.0mm	2.5mm	3.2mm
10V	Standard	-	0.5p - 3.9nF	1.0p - 15nF	1.0p - 47nF	3.9p - 100nF	-	4.7p - 100nF	10p - 220nF	-
16V	AEC-Q200	-	0.5p - 1.0nF	1.0p - 4.7nF	1.0p - 15nF	3.9p - 27nF	-	4.7p - 27nF	10p - 47nF	-
	Standard	-	0.5p - 2.7nF	1.0p - 12nF	1.0p - 33nF	3.9p - 68nF	-	4.7p - 68nF	10p - 180nF	-
25V	AEC-Q200	-	0.5p - 1.0nF	1.0p - 4.7nF	1.0p - 15nF	3.9p - 27nF	-	4.7p - 27nF	10p - 47nF	-
	Standard	0.1p - 220pF	0.5p - 2.2nF	1.0p - 10nF	1.0p - 27nF	3.9p - 56nF	-	4.7p - 47nF	10p - 150nF	-
50/63V	AEC-Q200	-	0.5p - 1.0nF	1.0p - 4.7nF	1.0p - 15nF	3.9p - 27nF	-	4.7p - 27nF	10p - 47nF	-
	Standard	0.1p - 220pF	0.5p - 1.5nF	1.0p - 5.6nF	1.0p - 22nF	3.9p - 33nF	-	4.7p - 33nF	10p - 100nF	-
100V	AEC-Q200	-	0.5p - 470pF	1.0p - 2.2nF	1.0p - 8.2nF	3.9p - 15nF	-	4.7p - 15nF	10p - 39nF	-
	Standard	0.1p - 100pF	0.5p - 470pF	1.0p - 2.2nF	1.0p - 8.2nF	3.9p - 18nF	-	4.7p - 18nF	10p - 47nF	-
200/250V	AEC-Q200	-	0.5p - 220pF	1.0p - 1.5nF	1.0p - 3.9nF	3.9p - 8.2nF	-	4.7p - 8.2nF	10p - 15nF	-
	Standard	0.1p - 33pF	0.5p - 220pF	1.0p - 1.5nF	1.0p - 3.9nF	3.9p - 8.2nF	-	4.7p - 8.2nF	10p - 22nF	27n - 27nF
500V	AEC-Q200	-	-	1.0p - 1.0nF	1.0p - 3.3nF	3.9p - 6.8nF	-	4.7p - 6.8nF	10p - 15nF	-
	Standard	-	0.5p - 150pF*	1.0p - 1.5nF	1.0p - 3.3nF	3.9p - 6.8nF	-	4.7p - 6.8nF	10p - 15nF	18n - 22nF
630V	AEC-Q200	-	-	1.0p - 820pF	1.0p - 2.7nF	3.9p - 5.6nF	6.8n - 6.8nF	4.7p - 6.8nF	10p - 15nF	-
	Standard	-	-	1.0p - 820pF	1.0p - 2.7nF	3.9p - 5.6nF	6.8n - 6.8nF	4.7p - 6.8nF	10p - 15nF	12n - 22nF
1kV	AEC-Q200	-	-	1.0p - 270pF	1.0p - 1.5nF	3.9p - 2.7nF	-	4.7p - 2.7nF	10p - 6.8nF	-
	Standard	-	-	1.0p - 270pF	1.0p - 1.5nF	3.9p - 2.7nF	-	4.7p - 2.7nF	10p - 6.8nF	8.2n - 8.2nF
1.2kV	AEC-Q200	-	-	1.0p - 68pF	1.0p - 390pF	3.9p - 680pF	-	4.7p - 1.0nF	10p - 3.3nF	-
	Standard	-	-	1.0p - 120pF	1.0p - 680pF	3.9p - 1.5nF	-	4.7p - 1.5nF	10p - 4.7nF	5.6n - 6.8nF
1.5kV	AEC-Q200	-	-	1.0p - 68pF	1.0p - 390pF	3.9p - 680pF	-	4.7p - 680pF	10p - 2.2nF	-
	Standard	-	-	1.0p - 82pF	1.0p - 390pF	3.9p - 820pF	-	4.7p - 1.0nF	10p - 2.7nF	3.3n - 3.3nF
2kV	AEC-Q200	-	-	1.0p - 47pF	1.0p - 220pF	3.9p - 470pF	-	4.7p - 470pF	10p - 1.5nF	-
	Standard	-	-	1.0p - 47pF	1.0p - 220pF	3.9p - 470pF	-	4.7p - 470pF	10p - 1.5nF	1.8n - 1.8nF
2.5kV	AEC-Q200	-	-	-	1.0p - 100pF	3.9p - 180pF	-	4.7p - 270pF	10p - 680pF	-
	Standard	-	-	-	1.0p - 100pF	3.9p - 220pF	-	4.7p - 270pF	10p - 820pF	1.0n - 1.0nF
3kV	AEC-Q200	-	-	-	1.0p - 68pF	3.9p - 150pF	-	4.7p - 220pF	10p - 470pF	-
	Standard	-	-	-	1.0p - 68pF	3.9p - 150pF	-	4.7p - 220pF	10p - 560pF	680p - 680pF
4kV*	Standard	-	-	-	-	-	-	4.7p - 120pF	10p - 270pF	330p - 390pF
5kV*	Standard	-	-	-	-	-	-	4.7p - 68pF	10p - 180pF	220p - 270pF
6kV*	Standard	-	-	-	-	-	-	4.7p - 47pF	10p - 120pF	150p - 180pF
8kV*	Standard	-	-	-	-	-	-	-	-	-
10kV*	Standard	-	-	-	-	-	-	-	-	-
12kV*	Standard	-	-	-	-	-	-	-	-	-

Notes: 1) \*Parts rated 4kV and above may require conformal coating post soldering.  
2) AG1 and U99 suffix parts maximise capacitance through increased chip thickness.

AG1 an U99 suffix parts maximize capacitance through increase chip thickness

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## COG/NPO AEC-Q200 & Standard Capacitance Range

	COG/NPO (1B)	2220		2225		3640		5550		8060	
	Part number suffix	-	U99	-	U99	-	U99	-	U99	-	U99
	Maximum Thickness	2.5mm	4.0mm	2.5mm	4.0mm	2.5mm	4.0mm	2.5mm	4.0mm	2.5mm	4.0mm
<b>10V</b>	<b>Standard</b>	10p - 470nF	-	10p - 560nF	-	-	-	-	-	-	-
<b>16V</b>	<b>AEC-Q200</b>	10p - 100nF	-	10p - 150nF	-	10p - 220nF	-	-	-	-	-
	<b>Standard</b>	10p - 330nF	-	10p - 470nF	-	-	-	-	-	-	-
<b>25V</b>	<b>AEC-Q200</b>	10p - 100nF	-	10p - 150nF	-	10p - 220nF	-	-	-	-	-
	<b>Standard</b>	10p - 220nF	-	10p - 330nF	-	-	-	-	-	-	-
<b>50/63V</b>	<b>AEC-Q200</b>	10p - 100nF	-	10p - 150nF	-	10p - 220nF	-	-	-	-	-
	<b>Standard</b>	10p - 150nF	-	10p - 220nF	-	10p - 330nF	-	27p - 680nF	-	47p - 1.0µF	-
<b>100V</b>	<b>AEC-Q200</b>	10p - 56nF	-	10p - 68nF	-	10p - 180nF	-	-	-	-	-
	<b>Standard</b>	10p - 68nF	-	10p - 82nF	-	10p - 270nF	-	27p - 470nF	-	47p - 680nF	-
<b>200/250V</b>	<b>AEC-Q200</b>	10p - 33nF	39n - 39nF	10p - 33nF	-	10p - 82nF	-	-	-	-	-
	<b>Standard</b>	10p - 33nF	39n - 56nF	10p - 47nF	56n - 68nF	10p - 120nF	150n - 180nF	27p - 270nF	330n - 330nF	47p - 390nF	470n - 560nF
<b>500V</b>	<b>AEC-Q200</b>	10p - 27nF	33n - 39nF	10p - 22nF	-	10p - 56nF	-	-	-	-	-
	<b>Standard</b>	10p - 27nF	27n - 39nF	10p - 33nF	39n - 47nF	10p - 82nF	100n - 120nF	27p - 180nF	220n - 270nF	47p - 270nF	330n - 470nF
<b>630V</b>	<b>AEC-Q200</b>	10p - 27nF	33n - 39nF	10p - 15nF	-	10p - 39nF	-	-	-	-	-
	<b>Standard</b>	10p - 27nF	22n - 39nF	10p - 22nF	27n - 39nF	10p - 68nF	82n - 100nF	27p - 120nF	150n - 180nF	47p - 220nF	270n - 390nF
<b>1kV</b>	<b>AEC-Q200</b>	10p - 15nF	-	10p - 10nF	-	10p - 22nF	-	-	-	-	-
	<b>Standard</b>	10p - 15nF	18n - 22nF	10p - 18nF	22n - 27nF	10p - 47nF	56n - 82nF	27p - 82nF	100n - 150nF	47p - 150nF	180n - 270nF
<b>1.2kV</b>	<b>AEC-Q200</b>	10p - 4.7nF	-	10p - 6.8nF	-	10p - 18nF	-	-	-	-	-
	<b>Standard</b>	10p - 10nF	12n - 15nF	10p - 12nF	15n - 22nF	10p - 33nF	39n - 56nF	27p - 68nF	82n - 100nF	47p - 100nF	120n - 180nF
<b>1.5kV</b>	<b>AEC-Q200</b>	10p - 4.7nF	-	10p - 4.7nF	-	10p - 12nF	-	-	-	-	-
	<b>Standard</b>	10p - 5.6nF	6.8n - 10nF	10p - 6.8nF	8.2n - 12nF	10p - 22nF	27n - 39nF	27p - 39nF	47n - 68nF	47p - 68nF	82n - 120nF
<b>2kV</b>	<b>AEC-Q200</b>	10p - 2.2nF	-	10p - 2.2nF	-	10p - 5.6nF	-	-	-	-	-
	<b>Standard</b>	10p - 3.3nF	3.9n - 5.6nF	10p - 4.7nF	5.6n - 6.8nF	10p - 10nF	12n - 18nF	27p - 22nF	27n - 39nF	47p - 39nF	47n - 68nF
<b>2.5kV</b>	<b>AEC-Q200</b>	10p - 1.5nF	-	-	-	-	-	-	-	-	-
	<b>Standard</b>	10p - 1.8nF	2.2n - 3.3nF	10p - 2.2nF	2.7n - 3.9nF	10p - 6.8nF	8.2n - 12nF	27p - 12nF	15n - 22nF	47p - 22nF	27n - 39nF
<b>3kV</b>	<b>AEC-Q200</b>	10p - 1.0nF	-	-	-	-	-	-	-	-	-
	<b>Standard</b>	10p - 1.5nF	1.8n - 2.2nF	10p - 1.8nF	2.2n - 2.7nF	10p - 4.7nF	5.6n - 8.2nF	27p - 10nF	12n - 18nF	47p - 15nF	18n - 27nF
<b>4kV*</b>	<b>Standard</b>	10p - 680pF	820p - 1.2nF	10p - 820pF	1.0n - 1.5nF	10p - 1.8nF	2.2n - 3.3nF	27p - 4.7nF	5.6n - 6.8nF	47p - 8.2nF	10n - 15nF
<b>5kV*</b>	<b>Standard</b>	10p - 470pF	560p - 820pF	10p - 560pF	680p - 1.0nF	10p - 1.5nF	1.8n - 2.2nF	27p - 2.7nF	3.3n - 4.7nF	47p - 5.6nF	6.8n - 10nF
<b>6kV*</b>	<b>Standard</b>	10p - 330pF	390p - 560pF	10p - 390pF	470p - 680pF	10p - 1.0nF	1.2n - 1.5nF	27p - 1.8nF	2.2n - 3.3nF	47p - 3.9nF	4.7n - 6.8nF
<b>8kV*</b>	<b>Standard</b>	-	-	-	-	10p - 150pF	-	27p - 330pF	-	47p - 680pF	-
<b>10kV*</b>	<b>Standard</b>	-	-	-	-	10p - 100pF	-	27p - 180pF	-	47p - 470pF	-
<b>12kV*</b>	<b>Standard</b>	-	-	-	-	10p - 68pF	-	27p - 120pF	-	47p - 220pF	-

AG1 an U99 suffix parts maximize capacitance through increase chip thickness

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# Knowles/SYFER

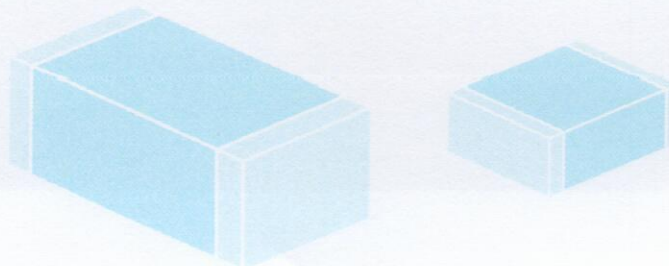
## Ordering Information COG/NPO AEC-Q200 & Standard

### Ordering information - AEC-Q200 ranges

0805	Y	100	0103	K	S	T	---
Chip size	Termination	Voltage	Capacitance in picofarads (pF)	Capacitance tolerance	Dielectric Release codes	Packaging	Suffix code
0603 0805 1206 1210 1808 1812 1825 2220 2225 3640	<p><b>Y</b> = FlexiCap™ termination base with Ni barrier (100% matte tin plating). RoHS compliant.</p> <p><b>H</b> = FlexiCap™ termination base with Ni barrier (Tin/lead plating with min. 10% lead). Not RoHS compliant.</p> <p><b>J</b> = Nickel barrier (100% matte tin plating). RoHS compliant. Lead free.</p> <p><b>A</b> = Nickel barrier (Tin/lead plating with min. 10% lead). Not RoHS compliant.</p> <p>Note: X7R (2R1) to AEC-Q200 is only available in Y or H termination.</p>	<p><b>016</b> = 16V <b>025</b> = 25V <b>050</b> = 50V <b>063</b> = 63V <b>100</b> = 100V <b>200</b> = 200V <b>250</b> = 250V <b>500</b> = 500V <b>630</b> = 630V <b>1K0</b> = 1kV <b>1K2</b> = 1.2kV <b>1K5</b> = 1.5kV <b>2K0</b> = 2kV <b>2K5</b> = 2.5kV <b>3K0</b> = 3kV</p>	<p>First digit is 0. Second and third digits are significant figures of capacitance code. The fourth digit is number of zeros following Example: <b>0103</b> = 10nF</p>	<p><b>F</b> = ±1% <b>G</b> = ±2% <b>J</b> = ±5% <b>K</b> = ±10% <b>M</b> = ±20%</p> <p>Note: X7R (2R1) parts are available in J, K &amp; M tolerances only.</p>	<p><b>A</b> = COG/NPO (1B) to AEC-Q200 - original <b>K</b> = COG/NPO (1B) to AEC-Q200 - recommended <b>E</b> = X7R (2R1) to AEC-Q200 - original <b>S</b> = X7R (2R1) to AEC-Q200 - recommended</p>	<p><b>T</b> = 178mm (7") reel <b>R</b> = 330mm (13") reel <b>B</b> = Bulk pack - tubs or trays</p>	<p><b>AG1</b> = Special Thickness <b>U99</b> = Special Thickness <b>WS2</b> = StackiCap™ <b>NC</b> = Conformal coating required</p>

### Ordering information - Standard ranges

1210	Y	200	0103	K	C	T	---
Chip size	Termination	Voltage	Capacitance in picofarads (pF)	Capacitance tolerance	Dielectric Release codes	Packaging	Suffix code
0402 0603 0805 1206 1210 1808 1812 1825 2220 2225 3640 5550 8060	<p><b>Y</b> = FlexiCap™ termination base with Ni barrier (100% matte tin plating). RoHS compliant.</p> <p><b>H</b> = FlexiCap™ termination base with Ni barrier (Tin/lead plating with min. 10% lead). Not RoHS compliant.</p> <p><b>J</b> = Nickel barrier (100% matte tin plating). RoHS compliant. Lead free.</p> <p><b>A</b> = Nickel barrier (Tin/lead plating with min. 10% lead). Not RoHS compliant.</p>	<p><b>010</b> = 10V <b>016</b> = 16V <b>025</b> = 25V <b>050</b> = 50V <b>063</b> = 63V <b>100</b> = 100V <b>200</b> = 200V <b>250</b> = 250V <b>500</b> = 500V <b>630</b> = 630V <b>1K0</b> = 1kV <b>1K2</b> = 1.2kV <b>1K5</b> = 1.5kV <b>2K0</b> = 2kV <b>2K5</b> = 2.5kV <b>3K0</b> = 3kV <b>4K0</b> = 4kV <b>5K0</b> = 5kV <b>6K0</b> = 6kV <b>8K0</b> = 8kV <b>10K</b> = 10kV <b>12K</b> = 12kV</p>	<p>First digit is 0. Second and third digits are significant figures of capacitance code. The fourth digit is number of zeros following Example: <b>0103</b> = 10nF</p>	<p><b>F</b> = ±1% <b>G</b> = ±2% <b>J</b> = ±5% <b>K</b> = ±10% <b>M</b> = ±20%</p> <p>Note: X7R (2R1) parts are available in J, K &amp; M tolerances only.</p>	<p><b>C</b> = COG/NPO (1B) <b>X</b> = X7R (2R1)</p>	<p><b>T</b> = 178mm (7") reel <b>R</b> = 330mm (13") reel <b>B</b> = Bulk pack - tubs or trays</p>	<p><b>AG1</b> = Special Thickness <b>U99</b> = Special Thickness <b>WS2</b> = StackiCap™ <b>NC</b> = Conformal coating required</p>



AG1 an U99 suffix parts maximize capacitance through increase chip thickness

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